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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,080	12/11/2003	David Akopian	915-007.065	7972

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WARE FRESSOLA VAN DER SLUYS &
ADOLPHSON, LLP
BRADFORD GREEN BUILDING 5
755 MAIN STREET, P O BOX 224
MONROE, CT 06468

EXAMINER


MULL, FRED H

ART UNIT	PAPER NUMBER
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3662

DATE MAILED: 09/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/734,080	Applicant(s) AKOPIAN ET AL.	
	Examiner Fred H. Mull	Art Unit 3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on ____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5-21-2004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101 and § 112

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1-13 are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility.
2. Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The invention described in the specification does not appear to be operative. Beginning on p. 15, line 12, a procedure is described that to determine an estimated position in the situations illustrated in Figs. 4-7 (p. 15, line 24).

Fig. 4 describes a situation where one GPS signal is received, and the mobile is synchronized to GPS time. Thus, based on the time interval between transmission of the GPS signal and reception, a distance is determined that

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defines a spherical shell of negligible thickness. Further, the mobile knows either (1) it must be within transmission range of a cell, or (2) it must be within a certain distance of its previously determined position. Either case results in a solid sphere in which the mobile must reside. The intersection of the spherical shell and solid sphere is a curved surface. The surface is then divided into a grid.

The procedure first states: "the distance to all available satellites or the strongest satellites SV_i , with $i = 1$ to n , is determined." (p. 15, lines 33-35). In the case of Fig. 4, there is only one satellite, so $i = 1$ only. However, when one gets to the equation for ME (p. 16, line 48), since all $i = 1$ and all $j = 1$, i can never be less than j , so $ME = 0$ for all gridpoints, and the procedure breaks down.

Fig. 5 describes a situation where two GPS signals are received, and the mobile is synchronized to GPS time. This results in two spherical shells, whose intersection is a circular ring. The intersection of this ring with the solid sphere of (1) or (2) gives an arc.

Again, the procedure first states: "the distance to all available satellites or the strongest satellites SV_i , with $i = 1$ to n , is determined." (p. 15, lines 33-35). From this distance $T_{TOF,i}$ is determined. $T_{TOF,i}$ is the time of flight from the single satellite to the respective grid point, thus giving $T_{TOF,1}$ and $T_{TOF,2}$. $T_{TOT,i}$, the time of transmission by the satellite, thus giving $T_{TOT,1}$ and $T_{TOT,2}$. $T_{TOA,i}$, defined on p. 16, line 12, would appear, then, to be the time the signal is received, i.e. the time of transmission plus the time of flight. ME would then be the time difference between when the signal from satellite 1 was received and the signal from satellite 2 was received.

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Since all the points and each spherical shell were determined based on being the same time interval away from the corresponding satellite, and since all the grid points on the arc are on each spherical shell, each $T_{TOF,i}$ is necessarily the same for each gridpoint. Of course, $T_{TOT,i}$ is the same for each gridpoint. Thus, $T_{TOA,i}$ and ME are the same for each gridpoint. Since all ME s are the same, the procedure again breaks down.

Figs. 6-7 are the cases when the mobile is not synchronized to GPS time, and thus there is some time uncertainty. Thus, each spherical shell now has a finite thickness. The center of the thickness will be based on the measured time interval, and the thickness itself will be determined by the maximum possible uncertainty in the time. It is unclear how the time of flight, $T_{TOF,i}$, is defined in this circumstance. Is it defined as the time interval that determined the center of the sphere? If so, then the procedure will break down just as above. If not, then how is it determined?

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under

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the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Kilfeather.

Kilfeather discloses delimiting a region containing said receiver position based on a code modulated signal received at said receiver from at least one beacon and on available information including at least an initial information on said receiver position; and estimating said receiver position as a position within said delimited region which minimizes an error criterion (abstract; col. 2, lines 26-53; col. 7, lines 19-20).

4. Claims 1-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Belcea.

Belcea discloses delimiting a region containing said receiver position based on a code modulated signal received at said receiver from at least one beacon and on available information including at least an initial information on said receiver position; and estimating said receiver position as a position within said delimited region which minimizes an error criterion (abstract; col. 3, lines 34-63; col. 5, line 64 to col. 6, line 64).

5. The examiner also finds the following reference(s) relevant:

Sullivan, which is similar to Kilfeather.

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Applicant is encouraged to consider these documents in formulating their response (if one is required) to this action, in order to expedite prosecution of this application.

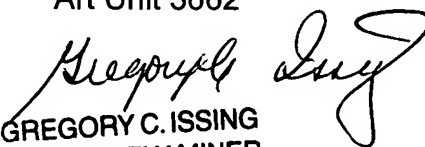
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred H. Mull whose telephone number is 703-305-1250. The examiner can normally be reached on M-F 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza can be reached on 703-360-4171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

fhm

Fred H. Mull
Examiner
Art Unit 3662


GREGORY C. ISSING
PRIMARY EXAMINER